

EPA ID: MAD055988927 Site Name: NEW ENGLAND RESINS &amp; PIGMENTS

State ID:

Alias Site Names: NEW ENGLAND RESINS &amp; PIGMENTS

City: WOBURN

County or Parish: MIDDLESEX

State: MA

Refer to Report Dated: 08/13/98

Report Type: Site Inspection Prioritization 001

Report Developed by: Roy F. Weston



SEMS DocID

633023

## DECISION:

☐ 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:☐ 1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)☐ 1b. Site may qualify for action, but is deferred to:☒ 2. Further Assessment Needed Under CERCLA:2a. Priority: ☐ Higher ☒ Lower

2b. Other: (recommended action)

## DISCUSSION/RATIONALE:

No releases to groundwater or surface water detected. Low priority for any further evaluation by Superfund program.

Site Decision Made by: NANCY SMITH

Signature: \_\_\_\_\_

Date: 09/01/98

**FINAL SITE INSPECTION PRIORITIZATION REPORT  
FOR  
NEW ENGLAND RESINS & PIGMENTS  
WOBURN, MASSACHUSETTS**

Prepared for:  
U.S. Environmental Protection Agency  
Region I  
Office of Site Remediation and Restoration  
John F. Kennedy Federal Building  
Boston, MA 02203-0001

CONTRACT NO. 68-W5-0009

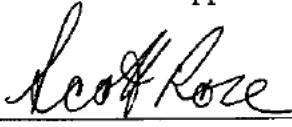
CERCLIS NO. MAD055988927  
TDD NO. 98-05-0095  
PCS NO. 5130  
DC NO. S-147

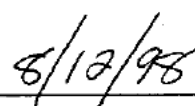
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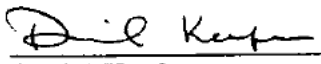
Roy F. Weston, Inc. (WESTON®)  
Superfund Technical Assessment and Response Team (START)  
217 Middlesex Turnpike  
Burlington, MA 01803

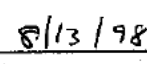
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Region I START  
Reviewed and Approved:

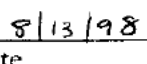
  
\_\_\_\_\_  
Scott Rose  
Site Leader

  
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Date

  
\_\_\_\_\_  
Daniel Keefe  
Project Leader

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
QA Review

  
\_\_\_\_\_  
Date

Work Order No. 11098-031-001-5130-70

## DISCLAIMER

This report was prepared solely for the use and benefit of the U.S. Environmental Protection Agency (EPA Region I), Office of Site Remediation and Restoration for the specific purposes set forth in the contract between the EPA Region I and the Roy F. Weston, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START). Professional services performed and reports generated by START have been prepared for EPA Region I purposes as described in the START contract. The information, statements, and conclusions contained in the report were prepared in accordance with the statement of work, and contract terms and conditions. The report may be subject to differing interpretations or misinterpretation by third parties who did not participate in the planning, research or consultation processes. Any use of this document or the information contained herein by persons or entities other than the EPA Region I shall be at the sole risk and liability of said person or entity. START, therefore, expressly disclaims any liability to persons other than the EPA Region I who may use or rely upon this report in any way or for any purpose.

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**Final Site Inspection Prioritization Report  
New England Resins & Pigments  
Woburn, Massachusetts**

**CERCLIS No. MAD055988927  
TDD No. 98-05-0095  
Work Order No. 11098-031-001-5130-70**

## **INTRODUCTION**

The Roy F. Weston, Inc. (WESTON) Superfund Technical Assessment and Response Team (START) was requested by the U.S. Environmental Protection Agency (EPA Region I), Office of Site Remediation and Restoration to perform a Site Inspection Prioritization (SIP) of the New England Resins & Pigments property at 316 New Boston Street in Woburn, Massachusetts. Tasks were conducted in accordance with the SIP scope of work and technical specifications provided by EPA Region I. A Site Inspection (SI) for the New England Resins & Pigments property was prepared by Ecology and Environment, Inc./Field Investigation Team (E&E/FIT) on 24 September 1985. E&E/FIT identified a former wastewater lagoon on the property that had been formerly used by various fertilizer and chemical companies that operated on the property prior to New England Resins & Pigments. During the 30-plus years of the lagoon's existence, it is unknown what types of chemicals may have been dumped into it. On the basis of the information provided in the SI, the New England Resins & Pigments SIP was initiated.

Background information used in the generation of this report was obtained through file searches conducted at the EPA Region I, Massachusetts Department of Environmental Protection (MADEP), telephone interviews with town officials, conversations with persons knowledgeable of the New England Resins & Pigments property, and conversations with other Federal, State, and local agencies.

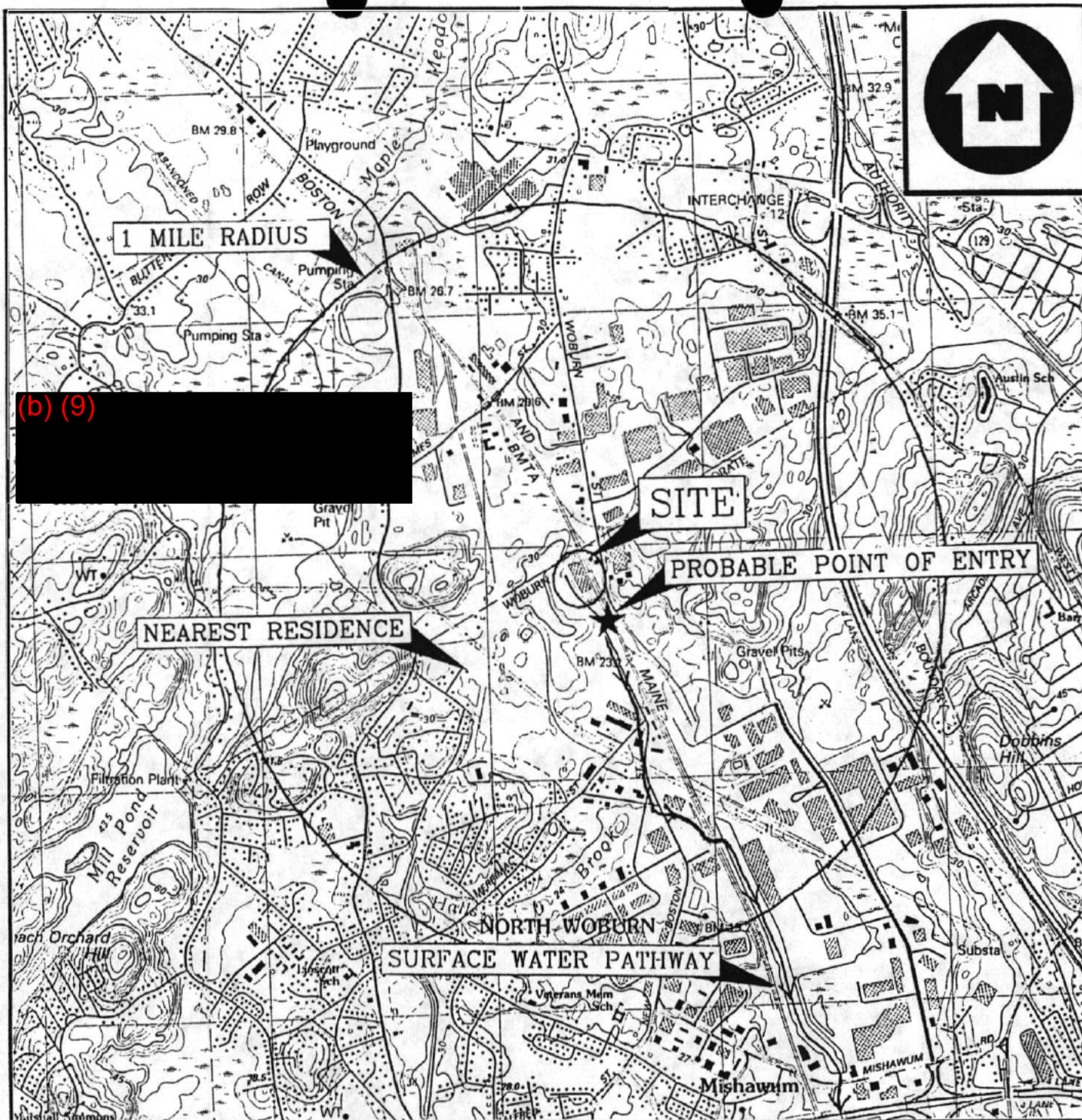
This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. SIPs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

## **SITE DESCRIPTION**

New England Resins & Pigments is located at latitude 42° 31' 30.6" north and longitude 71° 9' 14.6" west at 316 New Boston Street in Woburn, Middlesex County, Massachusetts. The 16.15-acre property is bordered to the west by the Woburn Sanitary Landfill, to the east by Boston & Maine railroad tracks, and to the north by the former Olin Chemical Company. New England Resins & Pigments is bordered to the south by the Industriplex-128 Site, which is included on the EPA National Priority List (NPL) (Figure 1) [3, p. 1].

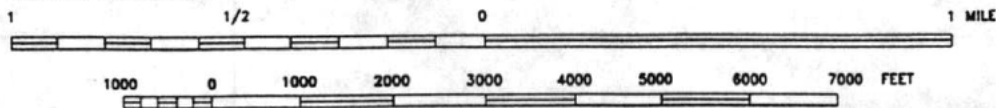
Note: Text which appears in *italics* indicates original portions of the E&E/FIT Site Inspection report which were either copied or paraphrased.





(b) (9)

BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15' U.S.G.S. QUADRANGLE(S):  
READING, MASS. 1996.



QUADRANGLE LOCATION

### LOCATION MAP

NEW ENGLAND RESINS & PIGMENTS  
316 NEW BOSTON STREET  
WOBURN, MASSACHUSETTS

## HWRE

Civil•Environmental•Hydrologic•Structural•Environmental•Hazardous Waste Engineering  
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #  
98-05-0095

DRAWN BY:  
M.H

DATE  
4/16/97

FILE NAME:  
HW-142\LOCATION

FIGURE 1



The primary activity of this facility is the storage of pigments, resins, and other bagged and drummed materials which are brought onto the property by rail cars. The bagged materials include iron and titanium oxides, organic pigments, limestone, talc, calcium carbonate, and cabosil [3, p. 1].

One large warehouse and two smaller buildings are located on the property (Figure 2). The warehouse is made up of two sections. The original, main section has a concrete foundation and a cinder block structure. This section houses the company offices and is used to store most of the materials handled by the company. A 5,000-gallon aboveground storage tank (AST) containing epoxy resins is located in the southwest corner of this building. The second section is a later addition to the main warehouse. It has a concrete foundation and a metal frame with aluminum siding. This section of the warehouse is heated and is used to store temperature sensitive epoxy resins. A 500-gallon propane AST is located outside this section of the warehouse [37, pp. 1-5].

The two smaller buildings, located south of the warehouse, are nearly identical. They are both wooden structures with concrete foundations. The westernmost building is used as a flammable materials storage shed. Approximately 78 55-gallon drums containing isopropyl alcohol, butyl glycidyl ether, and 1,2,4-trimethylbenzene are stored in the shed. The entrance to this shed is bermed so as to contain any spills. The easternmost building was partially boarded up at the time of the START on-site reconnaissance conducted on 4 March 1997 [37, pp. 1-5]. According to a 1994 report by Goldberg-Zoino and Associates, Inc. (GZA), this building is used for the storage of archived records [41, p. 19].

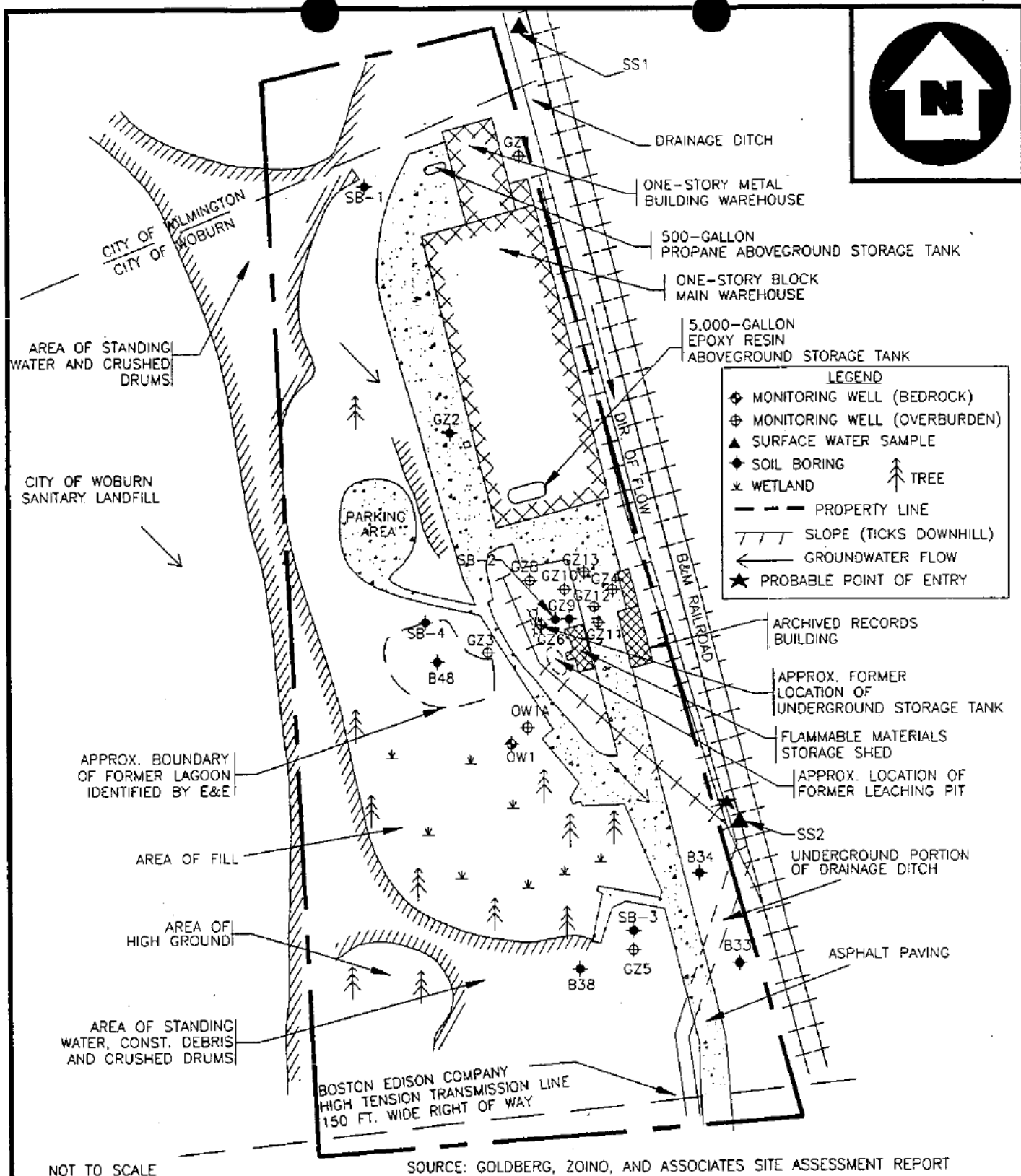
Approximately 200,000 pounds (lbs) of epoxy resins, stored in 55-gallon drums, are located in the warehouse [37, p. 2]. *Conspicuously leaking drums are refused during delivery.* The packaged and drummed materials remain unopened and are stored in the warehouse until they are distributed by New England Resins & Pigments to their customers throughout the New England area. The majority of the materials stored on the property are non-hazardous [3, p. 1]. The New England Resins & Pigments Company does not use any chemicals nor does it manufacture any products. The company does not generate any hazardous waste [3, p. 1].

The topography on the New England Resins & Pigments property slopes from west to east. Surface water drainage from the property flows into a drainage ditch that is located along the eastern boundary of the property, along the Boston & Maine railroad tracks, via overland flow and groundwater to surface water migration. Approximately 60% of the property is covered by asphalt paving or buildings, and there is no fence restricting access to the property [37].

A former wastewater lagoon is located near the center of the property. The lagoon has been completely covered with fill consisting of sand, gravel, boulders, and building rubble. It is presently used as open space and a parking and/or storage area [3, p. 2].

A gasoline underground storage tank (UST) was formerly located just north of the flammable materials storage shed. This tank was removed in 1983 [37, p. 2; 40, p. 2].





## SITE SKETCH

NEW ENGLAND RESINS & PIGMENTS  
316 NEW BOSTON STREET  
WOBBURN, MASSACHUSETTS

# HWRIE

Civil • Environmental • Hyarologic • Structural • Environmental • Hazardous Waste Engineering

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #  
98-05-0095

DRAWN BY:  
S.I.R.

DATE  
02/03/98

FILE NAME:  
HW-142/SITESKTH

FIGURE 2

## OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

The New England Resins & Pigments property and the property to the east have been occupied by a number of different businesses, including chemical and fertilizer factories, during the past 100 years. The Merrimac Chemical Company occupied the property from 1853 to 1929. Other chemical manufacturers, not specified in the available file information, occupied the property and surrounding area from 1929 through 1963. At least one of these companies maintained a waste or storage lagoon near the center of the property [3, p. 2]. *The lagoon is evident in aerial photographs taken in 1938, 1954, and 1966.* It is unknown when the lagoon was actually filled in; however, it may have occurred sometime between 1966 and 1980, when a Preliminary Assessment (PA) of the property was completed by E&E/FIT.

In April 1983, Stauffer Chemical Company (Stauffer) performed a hydrogeologic assessment of the Industriplex-128 Site. As part of this investigation, six soil borings were advanced on the New England Resins & Pigments property, two of which were completed as monitoring wells. Soil samples were screened for volatile organic compounds (VOCs) and analyzed for heavy metals. Groundwater samples were analyzed for metals, cyanide, pH, and conductivity [39, p. 5].

On 21 May 1986, GZA personnel sampled four wells that were installed as part of a Site Assessment of the New England Resins & Pigments property. The results of the analysis indicated that no VOCs other than methane, a naturally occurring by-product of the decay of organic material, were detected [39, p. 15]. In addition, GZA personnel collected an upstream and downstream surface water sample from the drainage ditch bordering the property to the east. Both samples were screened for VOCs by gas chromatography (GC) [41, p. 5].

In August 1991, ATEC, Inc. advanced four soil borings on the New England Resins & Pigments property. No monitoring wells were installed and no groundwater samples were collected or analyzed. Soil samples were analyzed for Toxicity Characteristic Leachate Procedure (TCLP) metals, VOCs, and total petroleum hydrocarbons (TPHs). VOCs and TPHs were detected in the samples; TCLP metals were not detected in any samples [41, p. 5].

On 9 September 1991, GZA personnel collected groundwater samples from the six wells installed on 3 September 1991 in the area of the former gasoline UST as part of additional sampling and analysis of the property. The samples were submitted for laboratory analysis for VOCs and TPHs. In addition, GZA personnel resampled the drainage ditch. The results and conclusions of the analysis were consistent with the 1986 sampling event [41, p. 6].

On 18 May 1994, GZA resampled the eight existing wells on-site as part of a Site Evaluation Update for the property. The samples were submitted for laboratory analysis for VOCs and TPHs. In addition, GZA personnel resampled the drainage ditch. The results and conclusions of the analysis were consistent with the 1986 sampling event [41, p. 24].

On 4 March 1997, START personnel conducted an on-site reconnaissance of the New England Resins & Pigments property. START personnel inspected the interior and exterior portions of the property as well as areas where hazardous substances have been used, stored, or generated [37, pp. 1-5].

On 8 July 1997, START personnel attempted to collect groundwater samples from three existing monitoring wells located on the New England Resins & Pigments property. Two of the three monitoring wells could not be located due to overgrown vegetation. The third well was dry and could not be sampled [37, pp. 6-9].

On 15 September 1997, START personnel collected five soil samples from the New England Resins & Pigments property. Samples were collected from two test pits excavated in the former lagoon and from a reference location as part of the SIP. The polychlorinated biphenyl (PCB) Aroclor-1254, heptachlor, dieldrin, phenanthrene, fluoranthene, pyrene, chrysene, barium, calcium, copper, lead, mercury, sodium, and zinc were detected at concentrations greater than three times the reference sample concentration or at concentrations greater than the sample's quantitation limit (SQL) (for organic analyses) and sample detection limit (SDL) (for inorganic analyses) [37, pp. 10-16].

START personnel attempted to collect groundwater samples using a hydraulic sampling device. Refusal was encountered at each location likely due to shallow bedrock and coarse, overburden, fill soils. As a result, START did not collect groundwater samples as part of the New England Resins & Pigments SIP [37, pp. 10-16].

Table 1 presents identified structures or areas on the New England Resins & Pigments property that are documented or potential sources of contamination, the containment factors associated with each source, and the relative location of each source.

**Table 1**  
**Source Evaluation for New England Resins & Pigments**

Source Area	Containment Factors	Spatial Location
Former Wastewater Lagoon	None	Western portion of property
Drums	Indoors, secondary containment	South of main building
Epoxy Resin AST	Indoors under maintained intact structure, secondary containment	Southwest corner of main building
Propane AST	No secondary containment	Outside northwest corner of main building
Former Gasoline UST	Removed	South of main building

[37, pp. 1-4]

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used, or stored on the New England Resins & Pigments property.

Table 2

## Hazardous Waste Quantity for New England Resins &amp; Pigments

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Aroclor-1254, heptachlor, barium, calcium, copper, lead, and zinc	22,500 square feet*	30*	30*	Former Wastewater Lagoon
Isopropyl alcohol, Butyl glycidyl ether, 1,2,4-trimethylbenzene	4,290 gallons	Circa 1976 to present	NA	Drums
Bisphenol A/Epichlorohydrin based Epoxy Resin	5,000 gallons	Circa 1976 to present	NA	Epoxy Resin AST
Propane Fuel	500 gallons	Circa 1986 to present	NA	Propane AST
Gasoline	1,000 gallons	Circa 1976 to 1983	NA	Former Gasoline UST

NA = Not Applicable

\* = Values are approximate

[37, pp. 1-4]

The former gasoline UST and propane AST sources are considered ineligible for evaluation due to CERCLA's petroleum exclusion policy. The epoxy resin AST is not eligible for evaluation since it is located indoors under a maintained intact structure with adequate secondary containment, therefore, making it unavailable to any pathways. As a result, these sources will not be used to evaluate the property.

There are a number of other potential sources of contamination in the vicinity of the New England Resins & Pigments property. Approximately 11 sites listed with MADEP are located within 0.5-radial miles of the property [47]. Three Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) facilities are located within 0.5-radial miles of the property [48]. New England Resins & Pigments is located immediately north of the Industriplex-128 Site, which is included on the EPA NPL [3, p. 1]. Four RCRA generators are located within 0.5-radial miles of the property [49].

## WASTE/SOURCE SAMPLING

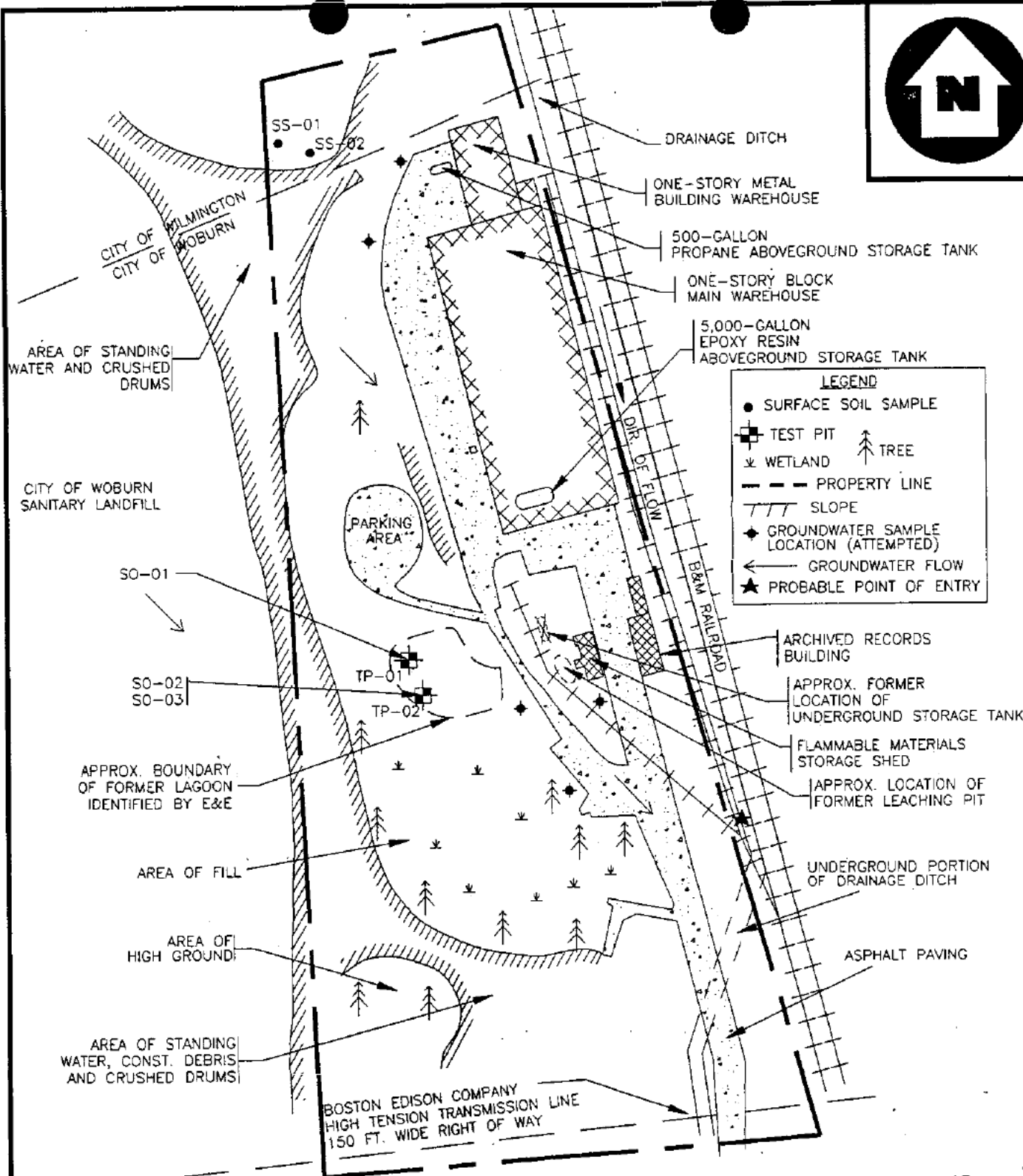
In April 1983, Stauffer advanced six soil borings (B-33, B-34, B-38, B-48, OW-1, and OW-1A) on the New England Resins & Pigments property, two of which (OW-1 and OW-1A) were completed as monitoring wells. Soil samples were screened for VOCs and analyzed for heavy metals, and did not indicate concentrations above "normal background levels".

In August 1991, ATEC, Inc. advanced four soil borings on the New England Resins & Pigments property (SB-1 to SB-4). Soil samples were analyzed for TCLP metals, VOCs, and TPHs. TCLP metals were not detected in any samples. The soil sample collected from SB-4, in the area of the former lagoon, contained 46.2 parts per million (ppm) TPHs. At location SB-2, in the area of the former gasoline UST, TPHs at a concentration of 845 ppm were reported. Analysis of the same sample for VOCs indicated the presence of ethylbenzene and total xylenes at concentrations of 15,000 parts per billion (ppb) and 460,000 ppb, respectively. Methylene chloride and acetone were detected at low concentrations in soil samples collected from SB-1, SB-3, and SB-4, and 2-butanone was reported in sample SB-4 at a concentration of 41 ppb [41, p. 5].

On 15 September 1997, START personnel collected soil/source samples from the New England Resins & Pigments property as part of the SIP. As part of this sampling event, two test pits (TP-01 and TP-02) were excavated on the property by Enpro Services, Inc. in the area of the former lagoon (Figure 3). Soils encountered in the top 2 feet (ft) of TP-01 consisted of dark brown to black sand with boulders, concrete, scrap metal, and brick. The bottom 6 ft consisted of tan sand and silt with cobbles and boulders. Soils encountered in the top 3 ft of TP-02 consisted of dark brown sand and silt with cobbles, boulders, railroad ties, brick, and concrete. The next 2 ft consisted of olive-grey to black clay, and some black sand and silt with cobbles. The bottom 3 ft consisted of brown sand and silt [37, pp. 10-16]. Most of the soils encountered in the test pits appeared to be fill materials. The black sand and clay encountered in TP-02 may indicate fill materials mixed with sludge when the former lagoon was filled.

A total of three source samples (SO-01 to SO-03), including one duplicate sample, were collected from the two test pits at a depth of approximately 8 ft. Two reference surface soil samples (SS-01 and SS-02) were collected from native soil at the northern end of the property using a hand auger. All samples were analyzed through the Contract Laboratory Program (CLP) for full Target Compound List (TCL) organic compounds, including VOCs, semivolatile organic compounds (SVOCs), pesticides/PCBs, and Target Analyte List (TAL) metals and cyanide. Soil sample SS-01 was analyzed for metals only [37, pp. 10-16].

The analytical results did not indicate any VOCs or cyanide above the detection limits for any of the source samples. Aroclor-1254, heptachlor, dieldrin, phenanthrene, fluoranthene, pyrene, chrysene, barium, calcium, copper, lead, mercury, sodium, and zinc were detected at concentrations greater than three times the reference sample concentration or at concentrations greater than the SQL or SDL. Toluene, 2-butanone, and various SVOCs were also detected, but at concentrations below the SQL [45-46]. Table 3 summarizes the waste/source samples collected by START personnel on 15 September 1997.



NOT TO SCALE

SOURCE: GOLDBERG, ZOINO, AND ASSOCIATES SITE ASSESSMENT REPORT

### START SAMPLE LOCATIONS

NEW ENGLAND RESINS & PIGMENTS  
316 NEW BOSTON STREET  
WOBURN, MASSACHUSETTS

# HWRIE

Civil • Environmental • Hydrologic • Structural • Environmental • Hazardous Waste Engineering

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #  
98-05-0095

DRAWN BY:  
S.I.R.

DATE  
02/03/98

FILE NAME:  
HW-142/SAMPLING

FIGURE 3.



Table 3

**Waste/Source Sample Summary: New England Resins & Pigments  
Samples Collected on 15 September 1997**

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth (ft)	Sample Source
<b>MATRIX: Soil</b>					
SO-01	AMY41 MAKM61	0945	Grab	Approx. 8	Sample collected from TP-01 at western edge of former lagoon; FID reading = 0 units above background.
SO-02	AMY42 MAKM62	1000	Grab	Approx. 8	Sample collected from TP-02 at western edge of former lagoon; FID reading = 0 units above background.
SO-03	AMY43 MAKM63	1000	Grab	Approx. 8	Duplicate sample of SO-02 collected for quality control; FID reading = 0 units above background.
SS-01	MAKM64	1124	Grab	0-2	Sample collected upgradient of former wastewater lagoon on south side of hill at northern edge of property as a reference sample. Sample collected for total metals analysis only.
SS-02	AMY45 MAKM65	1125	Grab	0-2	Sample collected upgradient of former wastewater lagoon on south side of hill at northern edge of property as a reference sample.
<b>MATRIX: Aqueous</b>					
TB-01	AMY53	0855	Grab	NA	Trip blank sample collected for quality control (VOC analysis only).
RB-02	AMY52 MAKM72	0900	Grab	NA	Soil sampling equipment rinsate blank sample collected for quality control.

NA = Not Applicable  
 FID = Flame Ionization Detector  
 VOC = Volatile Organic Compound

Table 4 is a summary of substances detected through CLP analyses of START waste/source samples. For each sample location, a compound or element is listed if it is detected at greater than or equal to three times the higher of the reference sample concentrations (SS-01 or SS-02). However, if the compound or element is not detected in the reference sample, the reference sample's SQL (for organic analyses) or SDL (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value greater than or equal to the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values.

Complete analytical results of START waste/source samples including quantitation and detection limits are presented in Attachment A. Sample results quantified with a "J" on analytical tables are considered approximate because of limitations identified during CLP data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

**Table 4**

**Summary of Analytical Results  
Waste/Source Sample Analysis for New England Resins & Pigments**

Sample Location	Compound/Element	Sample Concentration	Reference Concentration	Comments
SO-01 (AMY41) (MAKM61)	<b>PESTICIDES</b>			
	Dieldrin	5.1 J ppb	3.4 U ppb	1.5 × SDL
	<b>INORGANICS</b>			
	Barium	71.8 ppm	13.3 ppm	5.4 × Ref
	Calcium	36,200 ppm	541 ppm	66.9 × Ref
	Copper	25.4 ppm	8.2 ppm	3.1 × Ref
	Lead	23 ppm	7.1 ppm	3.2 × Ref
	Sodium	229 ppm	66.4 U ppm	3.4 × SDL
	Zinc	67.4 ppm	20.8 ppm	3.2 × Ref
SO-02 (AMY42) (MAKM62)	<b>SVOCs</b>			
	Phenanthrene	370 J ppb	340 U ppb	1.1 × SQL
	<b>PCBs</b>			
	Aroclor-1254	930 ppb	34 U ppb	27.4 × SQL
	<b>INORGANICS</b>			
	Calcium	6,850 ppm	541 ppm	12.7 × Ref
	Copper	25.2 ppm	8.2 ppm	3.1 × Ref
	Lead	140 ppm	7.1 ppm	19.7 × Ref
	Mercury	0.42 ppm	0.11 U ppm	3.8 × SDL
	Zinc	75.7 ppm	20.8 ppm	3.6 × Ref

Table 4

**Summary of Analytical Results**  
**Waste/Source Sample Analysis for New England Resins & Pigments**  
**(Concluded)**

Sample Location	Compound/Element	Sample Concentration	Reference Concentration	Comments
SO-03 (AMY43) (MAKM63)	<b>SVOCs</b>			
	Phenanthrene	930 J ppb	340 U ppb	2.7 × SQL
	Fluoranthene	590 ppb	340 U ppb	1.7 × SQL
	Pyrene	640 J ppb	340 U ppb	1.8 × SQL
	Chrysene	360 J ppb	340 U ppb	1.1 × SQL
	<b>PCBs</b>			
	Aroclor-1254	780 ppb	34 U ppb	22.9 × SQL
	<b>PESTICIDES</b>			
	Heptachlor	1.8 J ppb	1.8 U ppb	1.0 × SQL
	<b>INORGANICS</b>			
	Barium	42.8 ppm	13.3 ppm	3.2 × Ref
	Calcium	7,530 ppm	541 ppm	13.9 × Ref
	Copper	27.7 ppm	8.2 ppm	3.4 × Ref
	Lead	189 ppm	7.1 ppm	26.6 × Ref
	Mercury	0.28 J ppm	0.11 U ppm	2.5 × SDL
	Zinc	78.5 ppm	20.8 ppm	3.8 × Ref

ppm = Parts per million

ppb = Parts per billion

Ref = Reference sample concentration

SQL = Sample Quantitation Limit

SDL = Sample Detection Limit

SVOCs = Semivolatile Organic Compounds

PCBs = Polychlorinated biphenyls

U = Indicates the sample was analyzed but not detected and reports the detection value

J = Quantitation is approximate due to limitations identified during the quality control review

[45-46]

The Merrimac Chemical Company occupied the property from 1853 to 1929. Other chemical manufacturers and fertilizer factories, not specified in the file information, occupied the property and surrounding area from 1929 through 1963. There is no information regarding what was manufactured by these companies on the property prior to its ownership by New England Resins & Pigments. Substances detected in the former lagoon area may be attributable to waste management practices during a prior ownership of the property.

## GROUNDWATER PATHWAY

Approximately 60% of the property is covered by asphalt paving or buildings [37, p. 4]. *Soils on the property are fill materials consisting of sand, gravel, boulders, and demolition debris.* The mean annual precipitation for Reading, Massachusetts, measured approximately 1 mile east of the property, is 46.64 inches [25].

Bedrock beneath the property consists of metamorphosed mafic-to-felsic flow and volcanoclastic and hypabyssal intrusive rocks [12]. Groundwater occurs in overburden beneath the property at a depth of approximately 15 ft. *Groundwater flow beneath the property is in a southeasterly direction.* Groundwater discharge to surface water is likely to the drainage ditch, and ultimately to the Aberjona River, based on the property location being within the Aberjona River Watershed [18].

All or part of the following Massachusetts cities and towns are located within 4-radial miles of the New England Resins & Pigments property: Burlington (population 23,301); Reading (population 22,671); Stoneham (population 22,183); Wilmington (population 18,488); and Woburn (population 36,407) [7-10; 26].

The nearest public drinking water supply well is the Wilmington Water Department's Main Street Well which is located approximately 0.6 miles northwest and upgradient of the property [26; 27]. Wilmington's public water is supplied by eight groundwater wells located throughout the town. Water from these wells is blended before distribution [27]. Six of these wells are located within 4-radial miles of the property. Since no single source in the system contributes more than 40% of the total system, the 18,488 persons served by the system are apportioned evenly among the eight sources [27; 32].

Woburn's municipal water is supplied by six wells located near Horn Pond, two of which are located within 4-radial miles of the property. An additional two million gallons of water per day are supplied to the City of Woburn Water Department by the Massachusetts Water Resource Authority (MWRA) from the Quabbin Reservoir. The Woburn municipal wells are situated approximately 3.7 miles south-southwest of the property [20]. Since no single source in the system contributes more than 40% of the total system, the 36,407 persons served by the system are apportioned evenly among the seven sources [20; 31].

Stoneham's municipal water is supplied 100% by the MWRA. Reading's municipal water is supplied by nine groundwater wells, eight of which are located off of Strout Avenue and the other is located at the end of Beverly Road. All of these wells are located within 4-radial miles of the property. Since no single source in the system contributes more than 40% of the total system, the 22,671 persons served by the system are apportioned evenly among the nine sources [29; 33].

Burlington's municipal water is a blended system supplied by five groundwater wells and the Mill Pond Reservoir [28]. None of Burlington's drinking water sources are located within 4-radial miles of the property. Table 5 summarizes the populations which rely on public groundwater sources for drinking water within 4-radial miles of the property.

## Public Groundwater Supply Sources Within 4-Radial Miles of New England Resins & Pigments

<sup>a</sup> Indicates town in which well is located  
<sup>b</sup> Overburden, Bedrock, or Unknown

Private groundwater supplies located within 4-radial miles of the property were estimated using equal distribution calculations of U.S. Census CENTRACTS data identifying population, households, and private water wells for "Block Groups" which lie within or partially within individual radial distance rings measured from the New England Resins & Pigments property. The nearest private water supply well is estimated to be located between 0.25- and 0.5-radial miles from the property, but has not been specifically identified due to lack of private well information for Woburn and Wilmington. The total population which relies on groundwater within 4-radial miles of the property is estimated at 48,075 persons and is summarized in Table 6.

**Table 6**

**Estimated Drinking Water Populations Served By Groundwater Sources  
Within 4-Radial Miles of New England Resins & Pigments**

Radial Distance from New England Resins & Pigments (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
≥ 0.00 to 0.25	0	0	0
> 0.25 to 0.50	1	0	1
> 0.50 to 1.00	37	2,311	2,348
> 1.00 to 2.00	194	11,763	11,957
> 2.00 to 3.00	364	20,152	20,516
> 3.00 to 4.00	540	12,713	13,253
<b>TOTAL</b>	<b>1,136</b>	<b>46,939</b>	<b>48,075</b>

[6; 20; 27; 29; 31-33]

In April 1983, Stauffer personnel collected groundwater samples from two wells that were installed on New England Resins & Pigments property (OW-1 and OW-1A). The samples were analyzed for metals, cyanide, pH, and conductivity. The Stauffer report did not indicate whether or not the samples analyzed for metals had been filtered nor did it discuss the availability of a reference sample. The results of the analyses indicated pH and conductivity were within the normal range for developed areas of New England. Cyanide was not detected in either sample. Cadmium and zinc were detected but at concentrations below drinking water standards. Nickel was present in well OW-1A at a concentration of 100 ppb. Two extractable organic compounds, bis(pentafluorophenol) phosphin and bis(2-ethylhexyl)phthalate, were detected in well OW-1A at concentrations of 31 and 14 ppb, respectively. The Stauffer report does not indicate whether an extractable analysis was performed; therefore, the source of the results for the two extractable organic compounds detected is unknown [39, p. 5].

On 21 May 1986, GZA personnel sampled four wells (GZ-1, GZ-3, GZ-4, and GZ-5) that were installed as part of a Site Assessment of the New England Resins & Pigments property. The samples were analyzed for VOCs. The results of the analysis indicated that no VOCs other than methane, a naturally occurring by-product of the decay of organic material, were detected [39, p. 15].

On 9 September 1991, GZA personnel collected groundwater samples from the six wells installed on 3 September 1991 (GZ-6, GZ-8, GZ-10 through GZ-13) in the area of the former gasoline UST as part of additional sampling and analysis of the property. The samples were submitted for analysis for VOCs and TPHs [40, p. 5]. Concentrations of gasoline constituents (benzene, toluene, ethylbenzene, xylenes (BTEX)) were detected in the samples at levels below the available standards for public drinking water supplies. No TPHs were detected in the samples [41, p. 6].



On 18 May 1994, GZA resampled the eight existing wells on site as part of a Site Evaluation Update for the property. Monitoring wells GZ-1 and GZ-8 were destroyed due to property renovations. Samples were analyzed for VOCs and TPHs. The results indicated low concentrations of VOCs commonly found in gasoline (BTEX) from the area of the former UST. No other compounds were detected in groundwater samples [41, p. 24].

On 8 July 1997, START personnel attempted to collect groundwater samples from three existing monitoring wells located on the New England Resins & Pigments property. Two of the three monitoring wells could not be located due to overgrown vegetation. The third well was dry and could not be sampled [37, pp. 6-9].

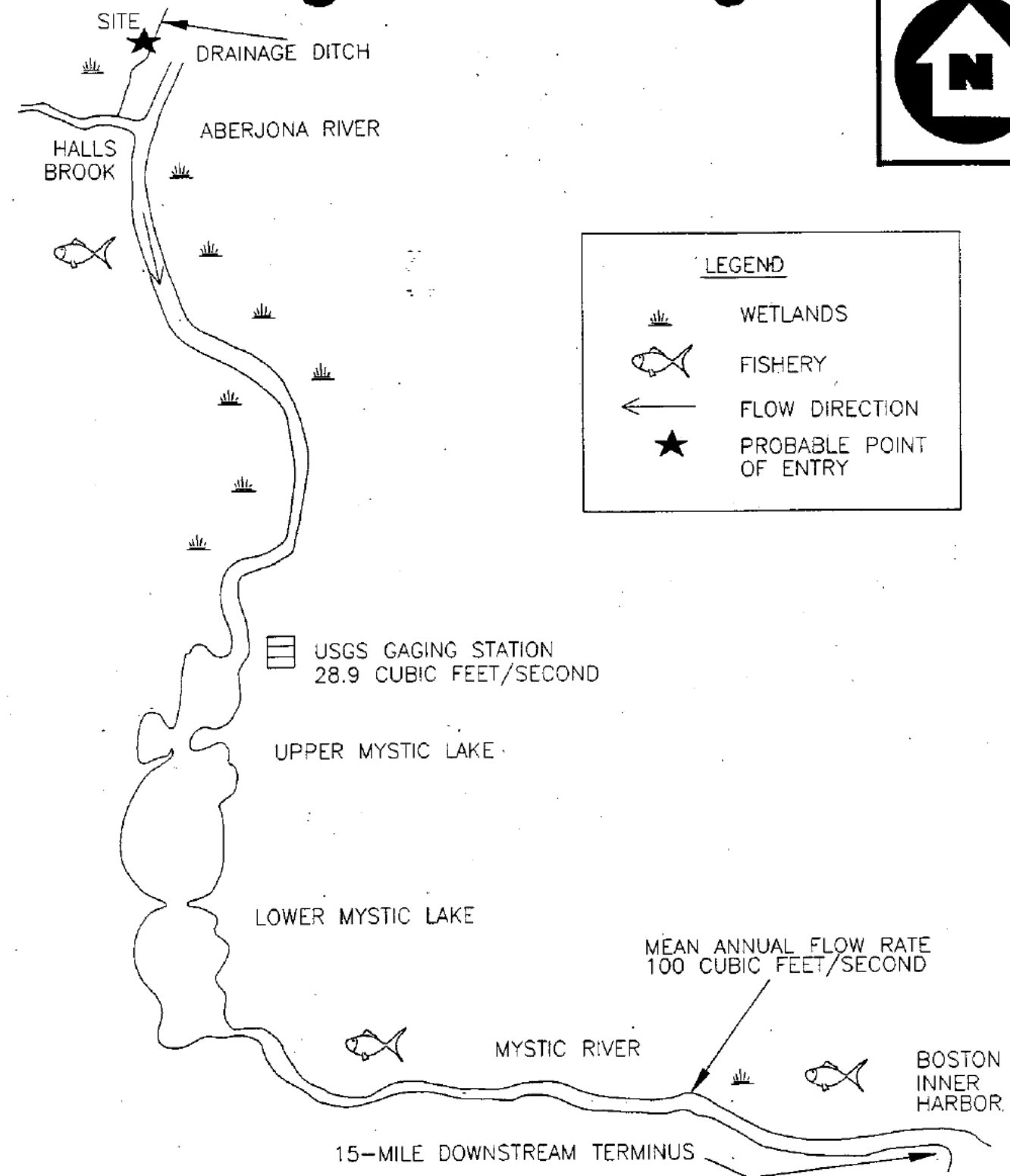
On 15 September 1997, START personnel attempted to collect groundwater samples using a hydraulic sampling device. Refusal was encountered at each location likely due to shallow bedrock and coarse, overburden, fill soils. As a result, START did not collect groundwater samples during this sampling event [37, pp. 10-16].

Despite two attempts, START was unable to collect groundwater samples as part of the New England Resins & Pigments SIP due to technical difficulties encountered during the site visits. Based on the results of previous sampling events, it appears that releases to groundwater have occurred on site. The nearest drinking water supply wells are located more than a quarter mile from the site, and are not known or suspected to be impacted by the wastes on site.

## **SURFACE WATER PATHWAY**

Surface water drainage from the New England Resins & Pigments property flows into a drainage ditch that is located along the eastern boundary of the property, along the Boston & Maine railroad tracks. The drainage ditch, which appears to be a permanent water body, discharges to Halls Brook approximately 3,000 ft to the south of the property. Halls Brook discharges in a southerly direction to the Aberjona River approximately 2 miles southeast of the property. The Aberjona River then flows south and discharges to Upper and Lower Mystic Lake. Surface water continues to flow south as the Mystic River, which eventually discharges to Boston Inner Harbor (Figure 4) [37; 41, p. 2].

The mean annual flow rate for the drainage ditch was estimated at 0.9 cubic ft per second (cfs) at the probable point of entry (PPE) to surface water, based on the drainage basin area at its confluence with Halls Brook [38]. The mean annual flow rate for Halls Brook was estimated at 2.7 cfs, based on the drainage basin area at its confluence with the Aberjona River [38]. The Aberjona River has a mean annual flow rate of less than 28.9 cfs [34]. The mean annual flow rate for the Mystic River was estimated at 118.8 cfs [34; 38]. A U.S. Geological Survey (USGS) gaging station, located approximately 4.5 miles downstream of the PPE, has a recorded mean annual flow rate of 28.9 cfs; no additional USGS gaging stations are located on the Aberjona or Mystic River [34]. Table 7 summarizes the characteristics of surface water bodies located within 15-downstream miles of the property.



NOT TO SCALE

BASED ON USGS READING AND BOSTON NORTH, MA QUADRANGLE

### SURFACE WATER PATHWAY SKETCH

NEW ENGLAND RESINS & PIGMENTS  
316 NEW BOSTON STREET  
WOBURN, MASSACHUSETTS

# HWRIE

Civil/Environmental/Hydrologic/Structural/Environmental/Hazardous Waste Engineering  
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #  
98-05-0095

DRAWN BY:  
M.H.

DATE  
4-16-97

FILE NAME:  
HW-142\SURFWATR

FIGURE 4

**Table 7**

**Surface Water Bodies Along the 15-Mile Downstream Pathway from  
New England Resins & Pigments**

Surface Water Body	Descriptor <sup>a</sup>	Length of Reach (miles)	Flow Characteristics (cfs) <sup>b</sup>
Drainage Ditch	Minimal stream	0 to 1	0.9
Halls Brook	Minimal stream	1 to 2	2.7
Aberjona River	Small to moderate stream	2 to 7.6	28.9
Mystic River	Small to moderate stream	7.6 to 12.75	28.9 to 100
Mystic River	Moderate to large stream	12.75 to 14.1	100 to 118.8
Boston Inner Harbor	Coastal tidal waters	14.1 to 15	NA

<sup>a</sup> Minimal stream < 10 cfs. Small to moderate stream 10-100 cfs. Moderate to large stream > 100-1,000 cfs. Large stream to river > 1,000-10,000 cfs. Large river > 10,000-100,000 cfs. Very large river > 100,000 cfs. Coastal tidal waters (flow not applicable).

<sup>b</sup> Cubic ft per second.

[7; 10; 13-16; 34; 38]

No surface water drinking water intakes are located along the 15-mile downstream pathway of the New England Resins & Pigments property [35]. All surface water bodies located downstream of the PPE are protected under the Clean Water Act (CWA), with the exception of the drainage ditch. Halls Brook and the Aberjona and Mystic Rivers are designated as Class B waterways by the MADEP along their entire lengths. Class B waterways are defined as "waters designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary recreation." These rivers are further denoted as warm water fisheries along their entire lengths [42]. Approximately 2.8 miles of wetland frontage exist along the 15-mile downstream pathway from the property [13-16]. Habitats for seven State-threatened species, one State-endangered species, and one Federally-endangered species are located along Halls Brook and the Aberjona and Mystic Rivers along the 15-mile downstream pathway from the property [36]. Table 8 summarizes the sensitive environments along the 15-mile downstream pathway from the property.

**Table 8**

**Sensitive Environments Along the 15-Mile Downstream Pathway from  
New England Resins & Pigments**

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)
Halls Brook	Water body protected under CWA	Halls Brook	1.0	2.7
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	3.93	28.9

Table 8

**Sensitive Environments Along the 15-Mile Downstream Pathway from  
New England Resins & Pigments (Concluded)**

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	4.13	28.9
Invertebrates Insecta	State-threatened Species Habitat	Aberjona River	4.17	28.9
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	4.17	28.9
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	4.22	28.9
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	4.28	28.9
Vascular Plants Dicotyledoneae	State-threatened Species Habitat	Aberjona River	4.43	28.9
Vertebrates Aves	Federally-endangered Species Habitat	Mystic River	12.08	28.9 to 100
Vertebrates Aves	State-endangered Species Habitat	Mystic River	12.96	100 to 118.8
Migratory Pathway for Alewife	Anadromous Fish Migratory Pathway	Boston Inner Harbor	14.40	NA
Spawning Ground for Alewife	Spawning Ground Within an Estuary	Boston Inner Harbor	14.40	NA
Aberjona River Wetlands	2.6 Miles Wetlands	Aberjona River	1 to 7.6	28.9
Mystic River Wetlands	0.2 Miles Wetlands	Mystic River	7.6 to 12.75	28.9 to 100

cfs = Cubic Feet Per Second

CWA = Clean Water Act

PPE = Probable Point of Entry

NA = Not Applicable

[36; 44]

On 21 May 1986, GZA personnel collected an upstream and downstream surface water sample from the drainage ditch bordering the property to the east. Both samples were screened for VOCs by GC. Low levels of VOCs were detected in the samples including one tentatively identified as toluene. However, the VOC concentrations were more elevated in the upstream sample than in the downstream sample and several identified potential sources of VOC contamination were located upstream; therefore, it was GZA's opinion that the source of the VOCs in the drainage ditch was from upstream of the property [41, p. 5].

GZA personnel resampled the drainage ditch in 1991 and 1994. The samples were again screened for VOCs by GC. The results and conclusions of the analysis were consistent with the 1986 sampling event [40; 41].

START did not perform Surface Water Pathway sampling as part of the New England Resins & Pigments SIP. Based on the results of previous sampling events, neither a release to surface water from on-site sources nor impacts to sensitive environments are known or suspected.

## **SOIL EXPOSURE PATHWAY**

New England Resins & Pigments has 26 full-time employees who work on the property [37, p. 2]. There are no residents on the property; the nearest residence is located approximately 2,000 ft southwest of the property on Virginia Avenue [10; 37]. The nearest school to the property is the Altavesta School, located 1.2 miles southwest of the property [9; 26]. No terrestrial sensitive environments are noted on the property [37, p. 2]. An estimated 3,626 persons live within 1-radial mile of the property [6].

Previous investigations conducted on the property by ATEC, Inc. and GZA consisted of the sampling of soils on the property. All of the soil samples collected were from a depth of greater than 2 ft, therefore, they are considered ineligible for evaluation in the Soil Exposure pathway.

Due to the location of on-site source areas, START did not suspect surficial soil contamination on the property, therefore, START did not perform surface soil sampling as part of the New England Resins & Pigments SIP. No other surface soil sampling is known to have been conducted for the New England Resins & Pigments property, therefore, no release of hazardous substances to surficial soils from on-site sources has been documented. Furthermore, based on the site observations and conditions, distance to nearest residence (approximately 2,000 ft), and lack of public use of the property, no impacts to nearby residential populations are known or suspected.

## **AIR PATHWAY**

Twenty-six full-time employees of New England Resins & Pigments work on the property [37, p. 2]. There are no on-site residents on the property; the nearest residence is located approximately 2,000 ft southwest of the property on Virginia Avenue [10; 37]. An estimated 123,376 persons live within 4-radial miles of the property, not including the on-site workers [6]. Table 9 summarizes the estimated population within 4-radial miles of the property.

Table 9

### Estimated Populations Within 4-Radial Miles of New England Resins & Pigments

Radial Distance from New England Resins & Pigments (miles)	Estimated Population
On a Source	26
> 0.00 to 0.25	210
> 0.25 to 0.50	570
> 0.50 to 1.00	2,845
> 1.00 to 2.00	21,203
> 2.00 to 3.00	42,713
> 3.00 to 4.00	55,835
TOTAL	123,402

[6]

Approximately 3,521 acres of wetlands are located within 4-radial miles of the property. In addition, habitats for one State-threatened, one State-endangered, and one Federal candidate species are located within 4-radial miles of the property [36]. Table 10 summarizes the sensitive environments located within 4-radial miles of the property.

Table 10

### Sensitive Environments Located Within 4-Radial Miles of New England Resins & Pigments

Radial Distance from New England Resins & Pigments (miles)	Sensitive Environments/Species (status)
> 0.00 to 0.25	14 acres wetlands
> 0.25 to 0.50	30 acres wetlands
> 0.50 to 1.00	Water body protected by Clean Water Act 224 acres wetlands
> 1.00 to 2.00	519 acres wetlands
> 2.00 to 3.00	One Federal candidate species habitat 1,254 acres wetlands
> 3.00 to 4.00	One State-threatened species habitat One State-endangered species habitat 1,480 acres wetlands

[13-16; 36; 38]



During the START on-site reconnaissance and sampling event, ambient air was monitored using a photoionization detector and a radiation meter. No readings above background were noted [37, p. 5].

No qualitative ambient air samples are known to have been collected from the property. START did not perform air sampling as part of the New England Resins & Pigments SIP. Based on the available data, no release of hazardous substances to the ambient air from on-site sources is known or suspected to have occurred and no impacts to nearby residential populations or sensitive environments are known or suspected.

## SUMMARY

New England Resins & Pigments is located at latitude 42° 31' 30.6" north and longitude 71° 9' 14.6" west at 316 New Boston Street in Woburn, Middlesex County, Massachusetts. The 16.15-acre property is bordered to the west by the Woburn Sanitary Landfill, to the east by Boston & Maine railroad tracks, and to the north by the former Olin Chemical Company. New England Resins & Pigments is bordered to the south by the Industriplex-128 Site, which is included on the U.S. Environmental Protection Agency (EPA) National Priority List (NPL).

The primary activity of this facility is the storage of pigments, resins, and other bagged and drummed materials which are brought onto the property by rail cars. The packaged and drummed materials remain unopened and are stored in the warehouse until they are distributed by New England Resins & Pigments to their customers throughout the New England area. The majority of the materials stored on the property are non-hazardous. The New England Resins & Pigments Company does not use any chemicals nor does it manufacture any products. The company does not generate any hazardous waste.

One large warehouse and two smaller buildings are located on the property. A 5,000-gallon aboveground storage tank (AST) containing epoxy resins is located in the southwest corner of the warehouse. The two smaller buildings are used as a flammable materials storage shed and for the storage of archived records.

The New England Resins & Pigments property and the property to the east have been occupied by a number of different businesses during the past 100 years, including chemical and fertilizer factories. The Merrimac Chemical Company occupied the property from 1853 to 1929. Other chemical manufacturers, not specified in the file information, occupied the property and surrounding area from 1929 through 1963. At least one of these companies maintained a waste or storage lagoon at the rear of the property. The lagoon is evident in aerial photographs taken in 1938, 1954, and 1966. The lagoon has been completely covered with fill consisting of sand, gravel, boulders, and building rubble. It is presently used as open space and a parking and/or storage area.

A gasoline underground storage tank (UST) was formerly located just north of the flammable materials storage shed. This tank was removed in 1983.

Investigations conducted between 1983 and 1986 in the vicinity of the former lagoon did not document the presence of volatile organic compounds (VOCs) or metals in soil or groundwater samples. Additional investigations, conducted in the vicinity of the former gasoline UST, documented groundwater contamination with benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPHs).

On 15 September 1997, START personnel collected soil samples from the test pits excavated in the former lagoon as part of the Site Inspection Prioritization (SIP). A total of three source samples (SO-01 to SO-03), including one duplicate sample, were collected from the two test pits at a depth of approximately 8 feet (ft). Two reference surface soil samples (SS-01 and SS-02) were collected from native soil at the northern end of the property using a hand auger. The analytical results of the soil samples indicated the presence of Aroclor-1254, heptachlor, dieldrin, four semivolatile organic compounds (SVOCs), and six metals in the samples collected from the test pits. No VOCs or cyanide were detected in the soil samples analyzed.

Groundwater occurs in overburden beneath the property at a depth of approximately 15 ft. Groundwater flow beneath the property is in a southeasterly direction. Approximately 48,075 persons rely on groundwater drinking sources within 4-radial miles of the property. Although limited, available groundwater data do not indicate a release from the former lagoon. A release has been documented from a former gasoline UST.

Surface water drainage from the New England Resins & Pigments property flows into a drainage ditch that is located along the eastern boundary of the property, along the Boston & Maine railroad tracks. The drainage ditch, which appears to be a permanent water body, discharges to Halls Brook approximately 3,000 ft to the south of the property. Halls Brook in turn discharges in a southerly direction to the Aberjona River approximately 2 miles southeast of the property. The Aberjona River then flows south and discharges to Upper and Lower Mystic Lake. Surface water continues to flow south as the Mystic River, which eventually discharges to Boston Inner Harbor. VOC screening of surface water samples collected by Goldberg-Zoino and Associates, Inc. (GZA) from the drainage ditch indicated the presence of toluene, which, based on reference samples, originated from a source upstream of the property.

Twenty-six full-time employees of New England Resins & Pigments work on the property. There are no on-site residents; the nearest residence is located approximately 2,000 ft southwest of the property on Virginia Avenue. An estimated 123,376 persons live within 4-radial miles of the property. An estimated 3,521 acres of wetlands are located within 4-radial miles of the property.

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